THE EFFECTIVENESS OF USING REALIA IN SCIENCE CLASS TO ASSIST STUDENTS' LANGUAGE ACQUISITION

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Abstract

One of the important things in teaching English is the language acquisition process and what input that should be given to students. The input needs to be comprehensible, means that it must be understood by students despite of their language proficiency difference. Comprehensible input can be categorized into visual, graphic and linguistic. In language acquisition the input given is essential. Input that the learners receive, plays an important role in the acquisition. Learners need to be given the opportunity to understand and as well as to produce a communicative act. In Krashen's Input Hypothesis, the learners improve and progress through an element that is beyond their level. This element is known as comprehensible input. Krashen emphasizes the need for creating comprehensible input in the classroom. The objective of the research is to know whether the use of realia in science class can help the language acquisition. Related to the objective of the research, the researcher used experimental method. The finding of the research is that there is a difference between students who taught by using realia and those who taught with no realia. It means that realia can assists students' language acquisition in science class of fourth grade students.

Keywords : Realia; Second Language Acquisition

INTRODUCTION

English is one of the most widely spoken languages in the world and becomes an official language in a number of countries. It dominates every aspect of our lives; global communication, business, media, etc. It is also the most studied language and being taught in schools worldwide. In Indonesia, English was first taught in 1914 during the Dutch colonial period. A few years after the independence from the Dutch, it was decided that English, rather than Dutch, would be the first foreign language in the country because Dutch was the language of the colonialist and it did not have the international status that English did.

Lowenberg (1991: 127), in the discussion about the role of English as a foreign language in Indonesia, suggests making it the official second language after Bahasa Indonesia. As the country's official second language, English could be used as the medium of instructions in education or workplace more frequently, it will give Indonesians more opportunity to develop their communication skills.

Thus, along with the demand for English proficiency nowadays, it has been already taught at the lower education level. Children in kindergarten have been introduced to simple English vocabularies. There is a presumption that the early we exposed to the target language, the better we grasp it. Language learning is a natural process and children may have different way to learn than adults. Children may need acquisition much more, although adults may need it as well.

In language acquisition the input given is essential. Input that the learners receive, plays an important role in the acquisition. Learners need to be given the

opportunity to understand and as well as to produce a communicative act. In Krashen's Input Hypothesis, the learners improve and progress through an element that is beyond their level. This element is known as comprehensible input. Krashen emphasizes the need for creating comprehensible input in the classroom.

One of the problems of teaching and learning English in Indonesia is because English only has a status as a foreign language. Students do not get enough exposure to the target language and they do not have a chance to practice what they have already learned at school, therefore teachers should encourage students to apply their English as often as they can, even though they do not speak it on a daily basis. It is teacher's responsibility to provide comprehensible input to help the students acquire the language. There are some strategies that can be applied in the classroom, one of them is to use realia.

Realia is a term for any real, concrete object used in the classroom to create connections with vocabulary words and stimulate conversation. It gives students the opportunity to use all of their senses to learn about any subject and is appropriate for any grade. According to Adrienne and Jordan (2000: 23), realia is a term for real things-concrete-object that are used in the classroom to build background and vocabulary. Realia is everyday, authentic objects, such as photographs, menus, maps, etc that are used to teach and learn languages. Celce-Murcia & Hilles (1988: 189), realia are objects of any origin used to illustrate vocabulary and structure in the L2. Using real objects in the learning process is recommended because students will have better understanding of the material.

While realia is commonly used as an aid to teach vocabulary, it is also can be used to teach science to ESL students. In science class, ESL students face a challenge during science instruction. The language of science can be confusing because it uses many words from everyday life that have different meanings. For example, students may know that they eat from a plate, but in science, plate tectonics has a different meaning. When students explore using realia, they are not just being exposed to abstract concepts or text on a page, they are using real-life objects to build understandings of the natural world while they build vocabulary about it.

According to Saville-Troike (2006: 2), second language acquisition (SLA) refers to both to the study of individuals and groups who are learning a language subsequent to learning their first one as young children, and to the process of learning that language. The additional language is called a second language (L2), even though it may actually be the third, fourth, or tenth to be acquired. It is also commonly called a target language (TL), which refers to any language that is the aim or goal of learning. Mitchell and Myles (2004: 5) defined second language acquisition as the process of the learning of a non-native language after the native language has been acquired. Thus *a second language* may mean a third or fourth language which is not necessarily contrasted with *a foreign language*, and this language may be learned in a formal and systematic way (in a classroom) or in an informal and unsystematic way (outside of a classroom) or in a combination of both.

The Input Hypothesis is developed by Stephen Krashen in the 1970s and 1980s. This hypothesis suggests that language acquisition occurs when learners receive messages that they can understand, a concept also known as comprehensible input. However, Krashen also suggests that this comprehensible input should be one step beyond the learner's current language ability, in order to allow learners to continue to progress with their language development.

The hypothesis emphasizes the importance of using the target language in the classroom. The goal of any language program is for learners to be able to communicate effectively. By providing as much comprehensible input as possible, especially in situations when learners are not exposed to the target language outside of the classroom, the teacher is able to create a more effective opportunity for language acquisition.

The use of realia is common in the ESL/EFL classroom and is widely considered to have great value in fostering an active teaching-learning environment. By presenting information through diverse media, realia helps to make English language input as comprehensible as possible and to build "an associative bridge between the classroom and the world" (Heaton, 1979). Interaction with authentic materials aids in contextually grounding instruction by bringing students into contact with language as it is used in the target culture in order to meet actual communication needs. The use of realia, then, can enhance linguistic and cultural comprehensibility, which are both prerequisites for real language learning.

Students learning science in English are facing a dual task, they have to learn the language in which science is taught and learning science-related content. Teachers are facing a dual task, that of teaching language as well as science. Science is best learned through immersive experience with the subject matter and it is very heavy in terminology. Real objects, pictures, visuals, and hands-on experiments are helpful in creating a connection between a new word and concept.

To successfully teach science concepts to English learners, teachers need to give simultaneous attention to the language used and the content presented. This can be done by modifying how teachers talk. Teachers can focus on keywords and use shorter and less complex sentences. To make science meaningful and increase student motivation, teachers can use real objects or visuals while presenting new material orally. Teachers should introduce topics whenever possible by using demonstrations, real objects, pictures, or physical clues to clarify meaning, for example, real thermometers should be available to students when talking about temperature measurement.

Integrating the teaching of science with language learning makes teachers of learners of English have the opportunity to help their students progress in understanding science concepts while developing English proficiency by applying specific teaching that incorporates language functions and structures into science activities. Strategies such as modifying teacher talk and making science relevant to students' everyday lives, can give English learners the preparation they need for succeeding in the English language science classroom and ultimately in the larger school context.

A study conducted by Bridget Connors Pinsonneault (2008) entitled *"Authentic Input in Early Second Language Learning"*. The study proposed a new pedagogical method for teaching the second language, especially for younger learners. It examined if using authentic input leads to lexical chunks (defined as vocabulary words and small phrases), acquisition of vocabulary and the beginning stages of the acquisition of some aspects of the lexicon, such as root morphemes and plural morphemes, and in some cases, gender morphemes in Spanish for a group of second language learners whose native language is English. Authentic input is incorporated into the language instruction through the use of songs, games, stories that derived from the target language. The subject of the study was seventeen kindergarten, first and second-grade students of Leeds Elementary School in Northampton, Massachusetts who had not previously learned a second language. The results of the study showed that the participants did learn lexical chunks in the target language after being introduced to the L2 using authentic materials. Additionally, the participants were able to demonstrate acquisition of agreement in number in the target language.

In order to find out how one particular teaching media plays a role in students' language acquisition, the researcher sets the research problem to: Can realia assists students' language acquisition in science class of fourth-grade students? The objective of this research is to know whether realia can assists students' language acquisition in science class of fourth-grade students.

METHOD

This research is a quantitative research and conducted in experimental method. According to Sugiyono (2009: 107) experimental research is a research method used to investigate the effect of certain treatment toward that on controlled condition. The kind of experimental method is the True Experimental Design with *Posttest-Only Control Group Design*.

The subject of this research is divided into two groups: the experiment group, which is taught using realia and control group, which is taught using a conventional method or without using realia. Each group is given posttest to know whether there is a difference between both. The population of the research is the fourth-grade students of MI ICP Nurul Ulum in academic year 2017/2018. They are divided into two classes; 4 Mekah, and 4 Madinah. Each class consists of 24 students. The control group is 4 Mekah while the experiment group is 4 Madinah.

FINDINGS AND DISCUSSION

Collecting data is one of the important things in a research. The techniques of collecting data used in this research are: (1) Treatment; The researcher teaches both experiment and control groups. Treatment is given to the experimental group by using realia while the control group is without realia. (2) Test; The test is a means of measuring the knowledge, skill, intelligence or aptitude of an individual or group. In this research, both the experiment

group and control group are given a test to know the understanding of the subject material.

Validity means the extent to which an instrument measures what should be measured, Donald Ary, et. al (2010: 316). Before the posttest is given, it is necessary to find the validity and reliability of the instrument. The tryout of the instrument validity and reliability was held on April 16, 2018. The posttest consists of questions related to the current topic of the lesson. The validity test uses Pearson Product Moment. Reliability indicates how consistently a test measure whatever it does measure, Donald Ary, et. al (2010: 242). After finding the validity of each item, the next procedure is to find the reliability. The reliability test can only be done to the valid items. The researcher uses Cronbach's alpha coefficient.

Based on the validity and reliability test result, it is known that 9 out of 15 questions are valid and reliable. Before giving treatment, the researcher developed teaching procedures for both experiment and control groups. The lesson topic for both groups is about Human Skeleton. After the instrument is valid and reliable, it can be used later in the posttest session. The posttest is conducted in both experiment and control groups on 24 April 2018. It consists of 9 questions with vary scores for each questions. Before testing the hypothesis, it is necessary to do the prerequisite tests.

The prerequisite tests consist of a normality test and homogeneity test. Normality test is used to measure whether the obtained data normal or not. The test was using Liliefors test. It was analyzed from the posttest of both experiment and control groups. First, the mean, variance, and standard deviation of the data need to be calculated. From the computation of experiment group's normality test, it shows that Liliefors observation or L_o is 0.1242 with significant level of 0.05 and n = 24, while the critical value of Liliefors table or L_{table} is 0.1766. Since L_o is 0.1242 and L_{table} is 0.1766 or L_o 0.1242 < L_{table}, it can be concluded that H_0 is accepted, which means that the data is distributed normally. Meanwhile, from the computation of control group's normality test, it shows that Liliefors observation or L_o is 0.1664 with significant level of 0.05 and n = 24, while the critical value of Liliefors table or L_{table} is 0.1766. Since L_o is 0.1664 and L_{table} is 0.1766 or L_o 0.1664 < L_{table}, it can be concluded that H_0 is accepted, which means that the data is normally distributed.

After finding out that the data are distributed normally, the next step is to know whether the data/sample in both groups were homogenous or heterogenous. Fisher test or F test will be used. From the computation, it shows that the $F_{obtained}$ or F_o is 1.214 while the F_{table} with α 0.05 = $F_{0.05(23,23)}$ is 2.014. Since F_o is 1.214 and F_{table} is 2.014 or F_o < F_{table}, it means that the data are homogenous. The result of the prerequisite tests found that the data is distributed normally and also homogenous. The next step is to test the hypothesis. To test the hypothesis, Independent Samples t Test is used. Independent Samples t Test compares the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different.

Table 1. Independent Sample t Test

Variables	Experiment Group	Control Group
number of sample (*n)*	24	24
mean ($\overline{X}$)	36.95	35.12
variance ($S^{2)}$)	4.99	4.11
standard deviation (S)	2.23	2.02
pooled std. dev (S_p)	1.4	
$T_{obtained}$	2.97	
T_{table}	2.01	

It is found that the value of $T_{obtained}$ is 2.97 while the value of T_{table} is 2.01 for the degree of freedom (df) 46 at the significance level of 95% (α = 0.05). Because the result indicates that the value of $T_{obtained}$ is 2.97 and T_{table} is 2.01 or T_o 2.97 > T_{table} 2.01, it means that the Null Hypothesis (H_0) is rejected and Alternative Hypothesis (H_a) is accepted. Realia can assist students' language acquisition in science class of fourth grade students of MI ICP Nurul Ulum in academic year 2017/2018.

The data presented in Data Analysis and Discussion are taken from the posttest results of both experiment and control groups. The average of posttest result in experiment group is 36.95 while the average of posttest result in control group is 35.12. It means that the average score in experiment group is higher than control group. The experiment group was taught using realia

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while the control group was taught without using realia or by lecturing.

Data analysis shows the normality of posttest in both groups. The normality of posttest in experiment group shows that L_o is 0.1242 and L_{table} is 0.1766 or $L_o < L_{table}$ while the normality of posttest in control group shows that L_o is 0.1664 and L_{table} is 0.1766 or $L_o < L_{table}$. The hypothesis of the normality test is $H_0 = L_o < L_{table}$ (data is normally distributed) while $H_a = L_o > L_{table}$ (data is not normally distributed). From the result of normality test in both groups, it can be stated that the data is normally distributed.

Next is to find whether the data of both groups is homogenous or not. The homogeneity test shows that F_o is 1.214 and F_{table} is 2.014. The hypothesis of homogeneity test is $H_0 = F_o < F_{table}$ (data is homogenous) while $H_a = F_o > F_{table}$ (data is not homogenous). From the result of homogeneity test of both goups, it can be stated that the data is homogenous.

After the data was normally distributed and homogenous, the next is to test the hypothesis. The hypothesis testing is using Independent Sample t Test with the decision if $T_{obtained} > T_{table}$, null hypothesis (H_0) is rejected and alternative hypothesis (H_a) is accepted, that means realia can assist students' language acquisition. Meanwhile if $T_{obtained} < T_{table}$, null hypothesis (H_0) is accepted and alternative hypothesis (H_a) is rejected, that means realia cannot assist students' language acquisition.

From the computation, it was found that the value of $T_{obtained}$ is 2.97 while the value of T_{table} is 2.01 or $T_{obtained} > T_{table}$, it can be drawn a conclusion that the null hypothesis (H_0) is rejected and alternative hypothesis (H_a) is accepted. Realia can assist students' language acquisition in science class of fourth grade students of MI ICP Nurul Ulum in academic year 2017/2018.

CONCLUSION

Based on data analysis, the researcher has gotten the data about the use of realia in science class that has been compared with the one without realia, both are of English Language Learners.

The researcher concludes that the students' who being taught with realia or experiment group scores higher than the students' who were taught without realia or control group. Realia takes part as the bridge to integrate scientific concepts with language instruction, especially for English Language Learners. Realia is also a great media to make the content learning comprehensible. In language acquisition, providing comprehensible input is important. For example, to be able to describe the human skeleton, students must understand concepts related to bones. They must have the vocabulary necessary to describe the physical of bones. They must also be able to present the information in the proper sequence and use the right sentence structure.

From the result of statistical calculation in the previous chapter, the value of $t_{obtained}$ is higher than the value of t_{table}. It indicates that there is a difference between teaching using realia and without using realia in science class of English Language Learners.

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